Cyclin D2 promoter, MSP primers

Accn. No. U47284   Promoter region analyzed: -1616 to -1394 bp

```
   1 gagctCGagcacGccatgccCGGctgcaCG tgccagcttg CGcagcacat cagggCGctg
  61 gtctctcccc ttcctcctgg agtgaaatac accaaagggC GCGgtggggg tggggggtga
 121 CGggaggaag gaggtgaaga aaCGccacca gatCGtatct cctgtaaaga cagccttgac CG
 181 tcaaggatgC GttagagcaC Gttcagggac CGaCctgcttggCGacttcacCGcagtCG
 241 gctcccaggg agaaagcctg gcagagtgag gCGCGaaacC GgagggtCGg CGaggatgCG
 301 ggCGaaggac CGagCGtgga ggcctcatgc ctcCGgggaa aggaagggt ggtggtgttt
 361 gCGcaggggg agCGagggg agcCGgacct aatccctcac tCGcccccctc ccctccCGg
 421 gccatttcct agaaagctgc atCGgtgtgg ccaCGctcag CGCagcacct CGggCGgct
 481 tgtcagcaga tgcaggggCG aggaagCGGg tttttcctgC GtggcCGctg ggCGgggaa
 541 cCGctgggag ccctgccccC GCGcctgtgC GctgcacCGC GtCGccccac
 601 gggcccCGaa gagcccccag aaacaCGatg gtttctgctC Gaggatcaca ttctatccct
 661 ccagagaagc accccccttc cttcctaata cccactctc cctcctctt cttcctctgc
 721 acacactctg cagggggggg cagaaggaC Gttgttctgg tcccttttaat CGggctttc
 781 gaaacagctt CGaagttatc aggaacacag acttcaggga catgacctt atctctgggt
 841 atgCGaggtt gctatttct aaaatcaccc cctcccttat ttttcactta agggacctat
 901 ttctaaattg tctgaggtca cccatcctc agataatcta ccctacattc ctggatctta
 961 aatacaaggg caggaggatt aggatccGtt ttgaagaagc caaagttgga gggtCGtatt
1021 ttggCGtgct acacctacag aatgagtgaa attagagggc agaaatagga gtCGgtagtt
1081 ttttgtgggt tgcctgtcCG gggcccctgg catgcaggct ggatggaggg agaggggtgg
1141 gggtggCGg gggacCGCGt ttgaagttgg gtCGggccag ctgctgttct ccttaataac
1201 gagaggggaa aaggaggag attgaaagga ggaggggagg acCGggaggg
1261 gaggaaaggg gaggaggaac cagagCGggg agCGCGggg agagggagga gagctaactg
1321 cccagccagc ttgCGtcacC GcttcagagC GgagaagagC Ggagcaggga gagCGagacc
1381 agttttaagg ggaggacCGg tgCGagtgag gcagcccCGa ggctctgctC Gcccaccacc
1441 caatcctCGc ctccctctg ctcacctttc tctctctgcc ctcacctctc cccGaaaaac
1501 ccctattta gccaaaggaa ggagttcagg ggaagtcagg ggaaagcagg acCGggaggg
1561 aaaaacagaa aaacccttt ccaggcCGgg gaaagcagga gggagggg cCGcCGggct
1621 ggccCGgag
```

FIGURE 1A

MSP Unmethylated 223 BP

GT TATGTTATGT TTGTTGTATG   Forward UM 22 BP MT 56

TT AAAATCCACC AACACAATCA   Reverse UM 21 BP MT 56

MSp Methylated 276 BP

TAC GTGTAGGGT CGATCG   F M 19 BP MT 58

CGA AATATCTACG CTAAACG   R M 20 BP MT 56

FIGURE 1B

Twist Promoter: Accn No. AC003986

Promoter Region analyzed: nts -51145 TO -51750

```
   1 cattggactg ggtttccttc cacCGaagag tgaacttctg cctctttCGa gcaccttcCG
  61 aggCGtagtc ctttggatgt tgggagCGt cagactgggt CGttgtagag gggaaaggag
 121 ggcccagaag ggCGagagag caggcCGgga CGcaaatcct cagccccCGC GgCGCGccaC
 181 Gtcttcagaa aCGccaggac ctcCGggctg ggcCGCCGCG gtttggcctt tggaactcaa
 241 gggttCGtct acctgaccat tgggtggctc CGCGgttgac actttcttg gcatgccccc
 301 ccaccccCGCG ccacaccacc ccccagcc cagcaatcca aatCGgcccc aCGgacctag
 361 agggctcttg ggCGagatga gacatcaccc actgtgtaga agctgttgcc attgctgctg
 421 tcacagccat CGgatgga ggtccacCG tggccaggac agtctcctcC GacCGcttcc
 481 tgggctgCGc tagggttCGg gggCGctgcc CGcaCGctcC GgCGgggaag gaaatCGccc
 541 CGCGccCGcC GgaggaaggC GaCGgggagg gaaggggag ggCGgctagg aggCGggtgg
 601 aggggcCGggc CGgccCGggcctagc CGgt tgaatggttt gggaggaCGa attgttagac
 661 ccCGaggaag ggaggtggga CGggggaggg ggactggaaa gCGgaaactt tcctataaaa
 721 cttCGaaaag tccctcctcc tcaCGtcagg ccaatgacac tgctgccccc aaactttcCG
 781 cctgcaCGga ggtataagag cctccaagtc tgcagctctC Gcccatcc cagacacctc
 841 gCGggctctg cagcacCGgc acCGtttcca ggaggcctgg CGgggtgtgC GtccagcCGt
 901 tgggCGcttt cttttgga cctCGgggcc atccacacCG tcccctcccc ctccCGcctc
 961 cctccccCGcc tccccCGCGC GcccctccCG GcccCGggcCG CGgaggtccc tccCGtcCGt cctcctgctc
1021 tctcctcCGC GggcCGcatC GccCGggcCG gCGcCGCGcC gCGCGCGCGcC Gggggaagc tggCGggctg
1081 aggCGccccCG ctcttctcct ctgcccCGgg ccCGcCGgagc caCGCGtCGc CGctCGagag
1141 atgcagg aCGtgtccag ctCGccagtc tCGcCGgcCG aCGacagcct gagcaacagc
1201 gaggaagagc cagacCGgca gcagccCGCG agCGgcaagC GCGggggaCG caagCGgCGc
1261 aCGagcaggC GcaCGgCGgg CGgCGgCGCGg gggcCGgcCG ggggcccag ggcaagCGCG
1321 ggCGgCGacCG agcCGggcag agcCGggcag ccCGgcccag CGgCGgCGCGg tgCGggctgt
1381 ggCGgCGgCGg gCGgCGgCGCG Gcagcagcaca gCGgCGgCGg gagtcCGcag
1441 tcttaCGagg agctgcagaC GcagCGggtc atggccaaCG tgCGggagCG ccagCGcacc
1501 cagtCGctga aCGaggCGtt CGcCGCGctg tcccccaCGct gccctCGgac
```

FIGURE 2A

```
1561  aagctgagca  agattcagac  cctcaagctg  gCGgccaggt  acatCGactt  cctctaccag
1621  gtcctccaga  gCGaCGagct  ggactccaag  atggcaagct  gcagctatgt  ggctcaCGag
1681  CGgctcagct  aCGccttctC  Ggtctggagg  atggagggggg  cctggtccat  gtcCGCGtcc
1741  cac▮▮▮cagg  CGgagccccc  caccccctca  gcaggcCGg   agacc▮▮gt  aaggacCGCG
```

FIGURE 2B

Unmethylated 193 BP

tt TGgatggggt tgtttatTGT FUM (3) 21 BP AT 58

ccctaaccCAaa CAacCAacc RUM (3) 20 BP AT 60

Methylated 200 BP

t tCGgatggg gttcttatC FM (5) 20 BP AT 58

aaaCGag ctaaccCGaa CG RM (4) 19 BP AT 58

FIGURE 2C

RAR beta promoter, MSP primers   ACCN NO. AF157483

Promoter region analyzed: nt -196 to nt -357

```
   1 gtgacagaag tagtaggaag tgagctgttc agaggcagga gggtctattc tttgccaaag
  61 ggggaccag aattcccat gCGagctgtt tgaggactggt gatgccCGayac cGgGagCGa
 121 tCCGag agg gtttgtctgg gcacCGtCGg ggtaggatcC GgaaCGcatt CGgaaggctt
 181 tttgcaagca tttacttgga aggagaactt gggatctttc tgggaacccc CCgagccGgtt
 241 tgg ttttc Gagcaagcct ggaaaatgca attgaaacac agagcaccag ctctgaggaa
 301 ctCGtcccaa gcccccatc tccacttcct ccccctCGag tgtacaaacc ctgcttCGtc
 361 tgccaggaca aatcatcagg gtaccactat gggtcagCG cctgtgaggg atgtaaggggc
 421 ttttcCGca gaagtattca gaagaat      atttacactt gtcacCGaga taagaactgt
 481 gttattaata aagtcaccag gaatCGatgc caatactgtC Gactccagaa gtgctttgaa
 541 gtgggaatgt ccaaagaatc tgtcaggaat gacaggaaca agaaaaagaa ggagacttCG
 601 aagcaagaat gcacagagag ctatgaaatg acagctgagt tggaCGatct cacagagaag
 661 atcCGaaaag ctcaccagga aactttccct tcactctgcc agctgggtaa atacaccaCG
 721 aattccagtg ctgaccatCG agtcCGactg gacctgggcc tctgggacaa attcagtgaa
 781 ctgccacca agtgcattat taagatCGtg gagtttgcta aaCGtctgcc tggtttcact
 841 ggcttgacca tCGcagacca aattaccctg ctgaaggcCG cctgcctgga catcctgatt
 901 cttagaattt gcaccaggta tacccccagaa caagacacca tgactttctc agaCGgcctt
 961 accctaaatC Gaactcagat gcacaatgct ggatttggtc ctctgactga ccttgtgttc
1021 acctttgcca accagctcct gcctttggaa atggatgaca cagaaaacagg cctttccagt
1081 gccatctgct taatctgtgg agacCGccag gaccttgagg aacCGacaaa agtagataag
1141 ctacaagaac cattgctgga agcactaaaa atttatatca gaaaaagaCG acccagcaag
1201 cctcacatgt ttccaaagat cttaatgaaa atcacagatc tcCGtagcat cagtgctaaa
1261 ggtgcagagC Gtgtaattac cttgaaaatg gaaattcctg gatcaatgcc acctctcatt
1321 caagaaatgc tggagaattc tgaaggacat gaacccttga cccccaagttc aagtgggaac
1381 acagcagagc acagtcctag catctcaccc agctcagtgg aaaacagtgg ggtcagtcag
1441 tcaccactCG tgcaataaga ca
```

FIGURE 3A

Unmethylated 163 BP

ggattggggatgttGaga aTGT   FUM 21 BP AT 60

CAaccaatcca accAaaaCAa   RUM 21 BP AT 60

Methylated 142 BP

ga acCGGagCGa ttCGagt   FM(2) 19 BP AT 60

Gaccaatcca acCGaaaCg   RM(2) 19 BP AT 58

FIGURE 3B

Homo sapiens serine protease-like protease (nes1) mRNA, complete cds   ACCESSION
AF024605

```
   1 accagcggca gaccacaggc aggcagagg cacgtctggg tcccctccct ccttcctatc
  61 ggcgactccc agatcctggc catgagagct ccgcacctcc acctctccgc cgcctctggc
 121 gcccgggctc tggcgaagct gctgccgctg ctgatggcgc aactctgggc cgcagaggcg
 181 gcgctgctcc cccaaaacga cacgcgcttg gaccccgaag cctatggcgc ccgtgcgcg
 241 cgcggctcgc agccctggca ggtctcgctc ttcaacggcc tctcgttcca ctgcgcgggt
 301 gtcctggtgg accagagttg ggtgctgacg gccgcgcact gcggaaacaa gccactgtgg
 361 gctcgagtag gggatgatca cctgctgctt cttcagggcg agcagctccg ccggacgact
 421 cgctctgttg tccatcccaa gtaccaccag ggctcaggcc ccatcctgcc aaggcgaacg
 481 gatgagcacg atctcatgtt gctaaagctg gccaggcccg tagtgccggg gccccgcgtc
 541 cgggccctgc agcttcccta ccgctgtgct cagcccggag accagtgcca ggttgctggc
 601 tggggcacca cggccgcccg gagagtgaag tacaacaagg gcctgacctg ctccagcatc
 661 actatcctga gccctaaaga gtgtgaggtc ttctaccctg gcgtggtcac caacaacatg
 721 atatgtgctg gactggaccg ggccaggac ccttgccaga gtgactctgg aggcccctg
 781 gtctgtgacg agaccctcca aggcatcctc tcgtggggtg tttacccctg tggctctgcc
 841 cagcatccag ctgtctacac ccagatctgc aaatacatgt cctggatcaa taaagtcata
 901 cgctccaact gatccagatg ctacgctcca gctgatccag atgttatgct cctgctgatc
 961 cagatgccca gaggctccat cgtccatcct cttcctcccc agtcggctga actctcccct
1021 tgtctgcact gttcaaacct ctgccgccct ccacacctct aaacatctcc cctctcacct
1081 cattccccca cctatcccca ttctctgcct gtactgaagc tgaaatgcag gaagtggtgg
1141 caaaggttta ttccagagaa gccaggaagc cggtcatcac ccagcctctg agagcagtta
1201 ctggggtcac ccaacctgac ttcctctgcc actcccgct gtgtgacttt gggcaagcca
1261 agtgccctct ctgaacctca gtttcctcat ctgcaaaatg ggaacaatga cgtgcctacc
1321 tcttagacat gttgtgagga gactatgata taacatgtgt atgtaaatct tcatgtgatt
1381 gtcatgtaag gcttaacaca gtgggtggtg agttctgact aaaggttacc tgttgtcgtg
1441 aaaaaaaaa aaaa
```

FIGURE 4A

Sequence analyzed: nts +169 to +349
Exon 3 sequence

cCGcagaggCG GgCGctgctc cccaaaaaCG acaCGCGctt ggacccCGaa ggcttatggCG ctgctggCG
GCGCGgctcCG cagcccctggc agtctCGct cttcaaCGgt ctctCGtt cc actgCGCGg tgtcctggtg gaccagagtt
gggtgctgaC GgCGCGaac tgCGaaaaca a

FIGURE 4B

Unmethylated 128 BP

tTGtagaggT GgTGttgttt   Nes1 FUM 20 BP AT 56

CACAcaat aaaaCAaaaa acCA   Nes1 RUM 22 BP AT 56

Methylated 137 BP

ttCGaa gttatggCG tttC   Nes 1 FM 20 BP AT 56

Eaftt cCGca ataCGCGac   Nes1 RM 20 BP AT 58

FIGURE 4C

AC004080

HOX A5 Promoter 3' to 5'

```
16321  accaagagag  actgggagag  ggCGgcagag  aagagagggg  ggacCGagag  cCGCGtcccc
16381  gCGgtCGCGt  ggatttagaa  aaaggctggc  tttaccatga  cttatgtgca  gcttgCGcat
16441  ccagggtag   atctggggt   gggCGggCGg  CGCGggctC   GgctCGctct  gCGcactCGc
16501  ctgctCGctg  ctggcagggg  CGtcctcctC  GgctcCGgaC  GgctCGctg   ccccctctct
16561  gctgctgatg  tgggtgctgc  CGgCGtCGgc  CGaggCGcCG  ctggagttgc  ttagggagtt
16621  tttccCGcCG  tggtggctgt  CGctgcCGgg  CGaggggcc   aCGgCGgagc  agggcagCGg
16681  atCGggctga  ggagagtgCG  tggaCGtggc  CGctggctg   tacctgggct  CGGgCGCGc
16741  CGCGctggCG  ctggcagCGt  agctgCGggC  GCGctctcCG  gagccaaagt  ggcCGggagcc
16801  CGagCGcGcCG  aCGctgagat  ccatgccatt  gtagcCGtag  cCGtacctgc  CGgagtgcat
16861  gctCGcCGag  tccctgaatt  gctCGctcaC  Ggaactatga  tctccataat  tatgcaactg
16921  gtagtcCGgg  ccatttggat  agCGacCGca  aaatgagttt  acaaaataag  agct[illegible]ttg
16981  tttttgata   tgtgtgcttg  atttgtggct  CGCGgtCGtt  tgtgCGtcta  tagcacccct
17041  gcacaattta  tgatgaatta  tggaaatgac  tgggacatgt  acttggttcc  ctcctaCGta
17101  ggcaccaaa   tatggggtaC  GacttCGaat  caCGtgcttt  tgttgtccag  tCGtaaatcc
17161  tgcctgatga  cctctagagg  taaactCGtg  cactaatagg  ggagttgggt  ggaggCGagg
17221  ggggtggCGC  GCGCGccccCG  ggCGCGtgcc  CGccagctt   tgcCGcCGtt  cagcCGgact
17281  CGagCGccac  cCGggtCGa   caggggctcat  CGccagctt   attgcattc   cctCGcagtt
17341  cCGgggtCGa  attgaggtta  cagcccatta  tggcaaaatt  attgcatttc  cctCGcagtt
17401  ccattaggat  gtaccaattg  ttaggcCGtc  agctgcCGat  CGCGCGccCG  gCGaggatgc
17461  agaggattgg
```

FIGURE 5A

Promoter region analyzed: nts -97 to nts -303

Complement- 5' to 3'

ccaatcctct gcatcctc**CG**c **CG**gg**CGCGCG** at**CG**gcagct ga**CG**gcctaa caattggtac atcctaatgg
aactg**CG**agg gaaatgcaat aatttgcca taatgggctg taacctcaat t**CG**acccc**CG**g cccttgcagc
ccc**CG**gtc**G**gt aagctgggg**CG** atgagccctg cctccag**CG**g gtgg**CG**gtc**CG** agtc**CG**gctg aa**CG**g**CG**gca
actgg**CG**g**CG** ggca**CGCGCG**cc **CG**ggg**CGCGC GCG**ccacccc.cct**CG**cctcc accaactcc cctattagtg
ca**CG**agttta cctctagagg tcatcaggcaggattta**CG**a ctggacaaca aaagca**CG**tg attc**CG**gagt**C**
Gtaccccata tttgggtgccta**CG**tagg ag ggaaccaagt acatg tcca gtcatttcca taattcatca
taaattgtgc aaggtgcta tagaa**CG**caca aa**CG**ac**CGCG** agccacaaat caagcacaca
tatcaaaaacaa hgc agct cttatttgt aaac cat ttg**CG**c**CG**cat atc**G**aaatgg cc**CG**gactac
cagttgcata attatggaga tcatagttc**C G**tgat**CG**agc aattcaggga ct**CG**g**CG**gagc atgcactc**CG**
gcaggta**CG**g cta**CG**gctac aatggcatgg atctcag**CG**t **CG**g**CG**ctcagc**CG**t ggctc**CG**gcc actttggtct
CGgagag**CGC GC**cc**CG**gcagct a**CG**ctgccag **CG**ccag**CGCG CG**g**CG**cc**CG**g**CG** agcc aggta cagcc agc**CG**
ggca**CG**tcca **CG**cactctcc tcagcc**CG**at

FIGURE 5B

UnMethylated 213 BP

tTGgtTGg aagtgggTG **FUM 18 BP** AT 56

gtaTGtg attTGaagtT Gtatt

aataC AaettCAaat caCAtac   **RUM 22 BP** AT 56

Methylated 183 BP

ttagCGg gtgggCGttCG   **FM 18 BP** AT 58

taCGtg attCGaagtC Gtat

ataC GaCttCGaat caCGta   **RM 20 BP** AT 56

FIGURE 5C

Sequencing 307 BP

atttgtta taatgggttg taat   Hox A5 Seq. F 23 BP AT 56

ggag ggaattaagt atatgtt

aacatat actaattcc ctcc   Hox A5 Seq.R   21 BP AT 56

Expression 248 BP

acttt gtcgttggct atgg   Hox Exp F 20 BP AT 60

ccaggta cagccagccg gc

ctg ctgctg tgctg   Hox Exp R 18 BP AT 62

FIGURE 5D

Homo sapiens 14-3-3 sigma protein promoter and gene, complete cds.
ACCESSION No. AF029081

```
   1 ggatcccagc ctgcccctcc acttctctcc caagccaggt cccggcatgg gtgggttatg
  61 ctcatgctgg caatacttga aacgggttta ttttttaaat gtattttgca caattttata
 121 gacctctttt ctacatagtc ttttttaaat ggaaggagaa aatgtcagcc acattactgt
 181 ctgtgtagtg ccaggtgaag ggttatcaga gagtgagagt gttttaataa gtttattcca
 241 agagaccttc tggctggaat gagtgagagt gtgtgtgcat gtgtgtgtgt gttcatgtgt
 301 gccctgtatg aatgtggctg gctcccagat ccccagggct gccccctgcc ccatcccctt
 361 tgagtatcag aagcactctg agccaagggg acaggggca cgtgcactgg tcacgagaaa
 421 accctgggct cccactgggg ctcagcccag cctcctatct ttccttcttc tatggacttc
 481 agacagccag tgtctgggga ctctgccact ctaccccag ccctacccac cagcccccag
 541 gtgaggcttc cagctgggac ctgccagac aggctgagcc tgggcgtggt gggtggggtg
 601 atggctctgg ggagcggctg ccatcctaca agccacaccc cctcctctga gctctgaata
 661 tgggacccag tgccaggagc tggaagacaa ggtgttctg ccaaacggga cctccatcca
 721 gagaaaaaga agaaggtgca gggtgggcca agaggcaagt gaaggttggc ctgagtctgg
 781 gccggaaact cagaggatgt ttctccctg ctggagctg tagtttctta tcaaaataga
 841 tattgttcca ccatccccct ccttctcac tcaagtgggc tgaagccttg gaaagtgaca
 901 taggaagtcc ccagatcttg ccctctcac tccagaggct agtggtcaca gacagctggg
 961 aatggcagcc acagagggtc cctctggaga aacagcttca cccagcctc agggccctgg
1021 gcatcactgc agtggccctg ggaggtgagg aagaagctgg ctagaggagg gggctcccac
1081 ctaccttta tttaagccag tattcttgt tcctgcttgt aataaaactt cagtttataa
1141 gagttgcttt gctttggttt ggtttttgtt tgctttcct ttgctgaggc cccaactggg
1201 agccctctgt tctttcagac aaatttggtt cttcctggg gagactgtga gaaggcaggc
1261 agcccagtga tctggctaca ttttccctca cctggctgga gctctgtccg ctggaggaag
1321 agcagagagg gctgcggctg agccccatg ggcacgtgaa aagaggccat cctgtcccct
1381 ctttgtcccc tccaccttcc cctgcctcag gggcttggag accccaaatt cttcttccct
1441 actgcctttc cactccatcc cccaatgagt gccagctaa gaaaatgttt gagacagtag
1501 attccagttt gagagccgga gctccctgg ctaccactc caacctgggc accagggccc
1561 agccagacaa ctcataaaca ctctggtatc tccctcagga ggacacctgt
```

FIGURE 6A

```
1621  caggattttg  ccatctcctg  cacagcctga  ggggagctaa  caggcctctt  tgcagagggt
1681  tagctggtaa  gaccgtttct  tccctgtcgg  ccagcactgc  cgctcccct   ccacacacca
1741  tctcatcctc  atcgcatgcc  tcgccaaccc  catggagccc  gtccatctgt  ctggtgtgtg
1801  gtgcggtgtg  tgtgctggtg  gtggtagggt  ctccaggac   tccccgctaa  gcagaaggat
1861  cgggatatag  ggcaaggcta  aaagcccagc  cccattgtgg  actgaggaag  tacgttcgcg
1921  cagagcagct  ctccagctgg  aagaggaggt  ggagggtgag  gctggggaga  ggatggcgaa
1981  cctgccctga  ggtgcttggg  tctgtgctgg  tgggtcctg   gtatgcaggg  gccaccggtc
2041  actaacactc  ttatgtcctg  gctttctgtc  cccgctgagc  tttctctcac  ccgccgttt
2101  tctctcctgc  ttcattgcct  gctgcctaag  ccttggccct  tctctcgggc  agaggcaggt
2161  gctgtggcag  cacctctccc  caccacgggg  cccctgcagg  ccgcctccct  cctccaggc
2221  ctgctaaccc  tctctcttct  ccttcttgc   tgtcctgccg  gggatctcca  gtgtgtgcgg
2281  gggcttaagg  acctcctgag  gaccgctgct  ctctgcctct  ccaggaatgg  cctgggggga
2341  gccaggcacc  cggcacctcc  acctgcctaa  cctgtggccc  atctgccacc  atctgtgcct
2401  acagggtctg  cccccagcc   tgccccgcct  gtgtgctctc  taggacccca  taggggcag
2461  gggctggcct  ctttgcccca  ttcccgctcc  atgccggcca  gagtgtagaa  agccataacg
2521  cacgcagcca  tcagcacaat  aatgtgactc  tacgctgata  tgctccctct  ctcctccact
2581  gacttcccct  tcccggattt  gtgaggtgtc  aagactagga  atctggcctt  agagcctgcc
2641  cctccacccc  ctcagatcag  gcatagccat  agtcaagccc  agcaggtttc  ctcaggagct
2701  gtctggggtg  ttgatggtgg  atgacgctgc  tgaacaagtt  tggtgactgt  tctaagcaca
2761  actggcttga  tactgttccc  acggcctgtc  cacctcccac  ccccaaccct  ccaccagagt
2821  aggtaggatg  taggggaggt  gcgtgccgcc  tttgctctag  gcactgaggg  accaagctag
2881  ccgtgcacag  ccccatacac  ttcaggggcg  taaaggaaag  agctgagcca  aggaaaatca
2941  gctgagccca  gggctggggg  ctgcttgtct  gctatcctgt  accttttttt  ttttaacca
3001  aaataaagat  tcccctcttc  ttgccatacc  attggctgtc  tggtggcgcc  tttactttgg
3061  ggcccaggga  tgggacctgc  agtgggcgtg  tggaacatat  ggctcccct   cgctcccagc
3121  tttcttccag  ctggccagtg  ctgtctgga   gatttacaag  cacaacgaag  ccaggaggga
3181  cacagagaaa  gtggctgaca  tccttttcac  tctgcccctc  cagaactctt  ggtctcaatt
3241  ccagcacca   cccagcctta  gctgacctct  ggattctgat  aggtcccagt  gcaggctgag
3301  acagagggtt  taactccagt  ttggactgc   catacccatg  aactgagccc  agcccagggt
3361  aacgatctca  tggaaacttc  tctctcccca  gttgctgcac  tacatcaaga  tacacacatg
3421  tgcatacact  gtactatggg  ctaaaaaaat  acgtaccgct  accgttcagc  aagggcttgc
```

FIGURE 6B

```
3481  cgagtcccgg gcccattttc tcatcttaac ctgtgaggag gatgatgtca gcctttttac
3541  agatgaggga actgagactc aaggaagaaa caggagctgc ccaaggtcac ccagctggca
3601  aagcagcaaa tcccagatcg gaacctgatc tctgccccga gctctgagcc atctgcacta
3661  cccaaggaat gaatacagcg gtgggaggat gagatcttgg agaaacccta aaattagaga
3721  atgtcatagc cagtagaggg cttagagttg atctggccca gcctccttgt tttactgatg
3781  gagaaattga agcccagagg caggaaggga cctgcccaag gccttataac agagctggga
3841  tgcagtccca cactctgacc tcattccatt ctctctccat aaattctgca ctgtctctag
3901  actggactgg tttagatgtg ggatactcta aacagcagtg ccttcaagag aaaaagaatc
3961  agaactacga atcacttaaa agtaatgtaa gctactctgg gcacactgcc tatgggtcg
4021  ccctgctcca caaggagcca caaaaataat taatatccct taatatccct tcccaaaggt
4081  aaccagtaaa gtaagctctt ggctaggtaa ctggactctt gttcacaact agccagtggg
4141  aaaaggtgct agagcttcct ctggccacct gtttaatttg atcattccaa gacagaaaca
4201  tttcttagga agttctttct agaatctacc tggtgtccct cccactgcta tcagagccct
4261  gtccctgtc ctcagtggag gtagagagca aatggttgct gctttcttca tcacaaccct
4321  tcaaagccta ttattaccag ctaagaagga ttggttgact atgggccaga gcccctgagc
4381  ctgctggtag aatggatgct gtacaggagg gtggggaggt agcaggcaga atgaggaaag
4441  cccctttgag ctgcaacccc agctcctgtc ctgctgactc agacagctga ctgtggagct
4501  ccatgccctg ccaggccctg ctgcctcctg ccgtctgagc tcctgaact tgggaaatgg
4561  aggcccagag gcaaagggag gtacctgaga caggaactga gtcaggatca acaggccaga
4621  gcgggcagga ggtatcaggc agcctggctc ccagatgcac ccctgagctc cagcagggga
4681  ggagtaggaa tgaaggggct tccttgccct tgctcatggc tatgcggagg gcgtgaacca
4741  ccaccagtc ctctggctta agtggcggga agcaaatggt ccctcctgg actcaggctc
4801  caaagttcct gggcctgcct tccaggttcc cagtgtcctg ggatctccag ctttccccag
4861  gacttgggga agccccggct ggatgactag tacaaatgaa ggcccctgag gttccaggac
4921  ctgctgaggt cacaggaata tcctagatca agcttgtcca acccacggcc cacaggctgc
4981  atgtggccca gaatggcttt gaatgcagcc caacacaaat tagtaaactt tcttaaaaca
5041  ttatgagatt tttttgcaaa tttttttttt ttttttagct catcagttat tggtagtgtt
5101  ggtatatttt atgtgtggcc caagacaatt cttccaatgt ggcccaggga agccaaaaga
5161  ttggacacgc ctgtcctaga tggagaggaa ggaggcagtg ctgagcacat ctggccattc
```

FIGURE 6C

```
5221  atccatctgg  agagagaagg  ctatgggcaa  actgcttcct  ctcccctgta  gacacccagc
5281  tgggaaggtc  tggcctttgg  taagtcctgg  cttgggtcc   ttcctcattt  cacagaacct
5341  aactctatgt  tagtgctttg  tgagtatatg  ttgatcataa  taaagttgac  gggattttt
5401  cacatgataa  taatagttgt  catctgccg   ggcatggtgg  cttatgccta  taatttcagc
5461  actttggaag  gctgaggcag  gtggatcact  tgaggtcagc  tgttcgagac  cagcctggcc
5521  aacatggtga  aaccacatct  ctacttaaaa  aaaaaaaaa   tacaaaaatt  agctgggtgt
5581  ggtggtgcac  ccttgtaatc  ccagctactc  gggaggctga  ggcaggagaa  tcacttgaac
5641  ccaggaggtg  gaggttgcag  tgagctgaga  ttgtgccact  acactccagc  ctgggtgaca
5701  agagcgaaac  tccgtctcaa  aaaaaaagaa  aataataata  ataatagttg  ccatccattc
5761  tactgtgctt  tccattaact  cgtgtaatcc  tcacaagtcc  catttatag   ttacaggaac
5821  tgaggctcac  agagcttaaa  tcacttggcc  aaggccacaa  acagctataa  gaattacatt
5881  taggcagtct  gattccaaag  atactagtct  attctgtatc  tcatagacaa  acaatacata
5941  ttcactttt   tgttgttgtt  ttgttttgag  acggagtctt  gctctgtcac  ccaggctgga
6001  gtgcagtggc  gccatctcgg  ctcactgcaa  cgtccgcctc  ccggttcaa   gcgattctcc
6061  tgcctcagcc  tcccgagtag  ctggactac   aggcatgtgc  caccatgccc  ggctaatttt
6121  ttgtatttt   agtagagaca  gggtttcct   agtgtcagt   gaatggtctc  gatctcctga
6181  ccttgtgatc  caccacctc   agcctcccaa  agtgctgaga  tgacaggcgt  gagccaccgc
6241  gtccgaccta  tattcactat  ttataaattg  gagagaataa  gaaaatcaaa  agggccaggt
6301  gtagtgactc  acacctgtaa  tcccagcact  ttgggaagcc  aaggcaggag  gattgcttga
6361  acccagaagt  tcgagaccag  cctggccaac  atggtgagac  cctgtctcta  caaaaaatac
6421  aaaaattagc  tgggcgttgt  ggtgagcacc  ttattcttag  gaagctgagg  caggaggatc
6481  acctgaggcc  aaggaggttg  agactgcagt  gagctgtgat  cataccactg  tacttcagcc
6541  tggacatcag  agtaagaccc  tatctctaaa  aaggaaattg  agaagaaaga  aaatcaaagg
6601  gaagcaaaat  cactcactct  cactacctca  agatacctc   tagaagttgg  tatttagtg
6661  tggttcctat  tgtttctgt   gtcagttctc  tgatttgagc  aaaatcttg   ggacgtcaaa
6721  cttaaaatcc  cctttacttc  cttggaaacc  ctgtagcatt  agcccagaca  tgtccctact
6781  cctccttgtg  gcaaagagaa  ggatctcgtc  tttggtcccc  agagttctgg  cctaagcctc
6841  cctccaggag  ggaagatgag  tgttcagaca  ctcagagtag  ctggggagga  cacaggcctg
6901  tgaaattatc  ctggctcaac  tattaggtcg  gcaggatccc  agtgaaggga  gccctacctc
6961  tgagcccat   ctaagctttg  gctatgggtg  gggcagataa  gcaggaatcc  atccctatag
```

FIGURE 6D

```
7021 gctcaatgcc aacacccta ggtgaaactc ttgatgaaac ttgaggccag ggctccggca
7081 agcaggggaaa gaacgttggc aacagaggtc tccatctctg aggactctgc cagggtcag
7141 agatggggca atggtcaaaa ggaaggaaca ggccaggcac agtggctcat gcccataatc
7201 ccagcacttt gggaggctga ggcaggagga tcgcttgagc ccaggagttt gagacctgcc
7261 tgggcaatgt agtgagatct gctctctatt taaaaaaaaa aaaaaggaaa gaacaagtaa
7321 acttctgaga aacaggctgg gggaggcatc acgtagctgg aattgctgcc ccataaaaca
7381 gaatggtatg tgtcactgcc acctcccttt ctcagtcctc tctctcccca ggttgctagc
7441 gtcccctgg gggatcaaac tggactgctt cccagcctca gacagagagc agtctgagtc
7501 aggcaggaaa gtgggacagc cggggagctg gacccccacc ctctgtgagcc ccgctggtac
7561 ctgatggcat gtggcttgga gaggggcaggt gacctggcgt ggaggccag agggtaaatc
7621 ctcaaacaag tggcaacagg ccaccaactt gaaagggaaa attgtgtagt gatgggaaat
7681 gtgtccaaca aacctactgg gtgactaatt acaaagctg ggctgagct tcagaggctg
7741 cttgttaaac acttcattaa gcggcactct gaaagctgcc acctgcgcat tctgggagct
7801 cagagggggac cctgagggggg aatgaggcct ggaggatgga accatcttca ggtagactga
7861 gaaggagcct ggatctcact tccaaacaca gtctggagct cataggtcag aggcctcaat
7921 gggagaaaag ctaaaggaag agggtgcaga aggagtttc agggaattgg tggctatgtg
7981 actttgagca aatctcaccc ctctctgaga cttagtgttc ccatctctat ggtcctgtgt
8041 gtgtcacaga gacatggtgg ggattaaatt cgatcgtgat atgaaaagtgc ttgggaaact
8101 ccatgccct acctaaacat gagttatcct cacctgaacc aaggggggaa gttacctggc
8161 aggattagga accccatcct cctgaaccctt tatgggctct gtcgaggctg aagcagccag
8221 gggctaaagc cagtccttag ccccctggaag ggcactgtga aagtggatct gatttgagaa
8281 gccgtttcct gatgtgggca gccatgtgat gccagccccg aacaagaggg ggcagcctgg
8341 agcctggaaa ggtgccagtg caggtgggc ccacgcccag atttctcctg ctgactgttc
8401 tgatgattca ccccacatc ccagccttt tacctttact gcagagccgg aaagggtgtg
8461 gggaagagag gagaggggag caggtcttgg gccctggtcc cgcccctgc tcctcccccac
8521 ccttctctgg gcctggccac ccagccaaaa ggcaggccaa gagcaggaga gacacagagt
8581 ccggcattgg tcccaggcag cagttagccc gccgcccgcc tgtgtgtccc cagagccatg
8641 gagagagcca gtctgatcca gaaggccaag ctggcagagc aggccgaacg ctatgaggac
8701 atggcagcct tcatgaaagg tcatgaaagg cgccgtggag aaggggcgagg agctctcctg cgaagagcga
```

FIGURE 6E

```
8761   aacctgctct cagtagccta taagaacgtg gtgggcggcc agaggctgc ctggaggtg
8821   ctgtccagta ttgagcagaa aagcaacgag gagggctcgg aggagaaggg gcccgaggtg
8881   cgtgagtacc gggagaaggt ggagactgag ctccaggggc tgtgcgacac cgtgctgggc
8941   ctgctggaca gccacctcat caaggaggcc gggacgcccg agagccgggt cttctacctg
9001   aagatgaagg gtgactacta ccgctacctg gccgaggtgg ccaccggtga cgacaagaag
9061   cgcatcattg actcagcccg gtcagcctac caggaggcca tggacatcag caagaaggag
9121   atgccgccca ccaaccccat ccgcctgggc ctgccctga actttccgt cttccactac
9181   gagatcgcca acagccccga ggaggccatc tctctggcca agaccactt cgacgaggcc
9241   atggctgatc tgcacaccct cagcgaggac tcctacaaag acagcaccct catcatgcag
9301   ctgctgcgag acaacctgac actgtggacg gccgacaacg ccggggaaga gggggcgag
9361   gctcccccagg agcccccagag ctgagtgttg cccgccaccg cccccgcctg ccccctccag
9421   tcccccaccc tgccgagagg actagtatgg ggtgggaggc cccacccttc tccctaggc
9481   gctgttcttg ctccaaaggg ctccgtggag agggactggc agagctgagg ccacctgggg
9541   ctgggatcc cactcttctt gcagctgttg agcgcaccta accactggtc atgcccccac
9601   ccctgctctc cgcaccccgct tcctcccgac cccaggacca ggctacttct ccctcctct
9661   tgcctccctc ctgccccctgc tgcctctgat cgtaggctgat gaggagtgtc ccgccttgtg
9721   gctgagaact ggacagtggc aggggctgga gatgggtgtg tgtgtgtgtg tgtgtgtg
9781   tgtgtgcgcg cgcgccagtg caagaccgag actgaggaa agcatgtctg ctgggtgtga
9841   ccatgtttcc tctcaataaa gttcccctgt gacactcctc ctgtctctct tccagttctt
9901   ggcgatgggc tgggagtggg actgaatct gacttagaga ccctgacttt ggacctctga
9961   gttagggccc tgaactcccct aggtggctca gtgcccgca cgcaagactt tgagtccagg
10021  tgaggccggg gtcc
```

FIGURE 6F

H.sapiens Wilms tumor (WT1) gene promoter. ACCESSION No. X74840

```
   1 agcttgcagc cccagcccgg gccagccagg tacaggaggc cggactgcaa ccggttgctt
  61 ccctcccgtc gcgcctggcc gtcccacgct gcgccgtcgc tgctgcctcc tggcgcccct
 121 gggatttttat acgcacctct gaaacacgct ccgctccggc cccggttct tctccttgcc
 181 taggggttgt ttcccaatag atactgactc ctttagaaga tccaaaaacc aaaccaaaac
 241 acccctacc cgccccaaac acctgctctg gggcgcgggg gctgccaaac agagactaga
 301 cgaagggagt cagatttagc gaantcttcg agctcccaaa gattcgaaca ctaactcgcg
 361 cccgtgggcc gatgaggtt ctcccctactc cactccttgg tccccttaac tggcttccgc
 421 ctcctggtca atcactgagc aaccagaatg gtatcctcga ccagggccac aggcagtgct
 481 cggcggagtg gctccaggag ttacccgctc ctgccgggct tcgtatccaa accctcccct
 541 tcaccctcc tccccaaact gggcgccagg atgctccggc cggaatatac gcaggctttg
 601 gggcgtttgcc caagggtttt cttcccctcct aaactagccg ctgtttttccc ggcttaaccg
 661 tagaagaatt agatattcct cactggaaag ggaaactaag tgctgctgac tccaattta
 721 ggtaggcggc aaccgcttcc gcctggcgca aacctcacca agtaaacaac tactagccga
 781 tcgaaatacg cccggcttat aactggtgca actccccggcc acccaactga gggacgttcg
 841 ctttcagtcc cgacctctgg aacccacaaa gggccacctc tttccccagt gacccccaaga
 901 tcatggccac tccccctaccc gacagttcta gaagcaagag ccagactcaa gggtgcaaag
 961 caagggtata cgcttcttg aagcttgact gagttctttc tgcgctttcc tgaagttccc
1021 gcccctcttgg agcctacctg cccctcccctc caaaccactc tttttagatta acaaccccat
1081 ctctactccc accgcattcg accctgcccg gactcactgc ttacctgaac ggactctcca
1141 gtgagacgag gctcccacac tggcgaaggc caagaagggg aggtgggggg agggttgtgc
1201 cacaccggcc agctgagagc gcgtgttggg ttgaagagga gggtgtctcc gagagggacg
1261 ctccctcgga cccgccctca cccagctgc gagggcgccc ccaaggagca gcgcgcgctg
1321 cctggccggg cttgggctgc tgagtgaatg gagcggccga gcctcctggc tcctcctctt
1381 cccgcgccg ccggccccctc ttatttgagc tttgggaagc tttgggaagc caggcagctg
```

FIGURE 7A

```
1441 gggtaaggag ttcaaggcag cgcccacacc cgggggctct ccgcaacccg accgcctgtc
1501 cgctccccca cttcccgccc tccctcccac ctactcattc acccacccac ccacccagag
1561 ccgggacggc agcccaggcg cccgggcccc gccgtctcct cgccgcgatc ctggacttcc
1621 tcttgctgca ggacccggct tccacgtgtg tcccggagcc ggcgtctcag cacacgctcc
1681 gctccggggc tgggtgccta cagcagccag agtccgggac ccgggcggca
1741 tctgggccaa gttaggcgcc gccgaggcca gcgctgaacg tctccagggc cggaggagcc
1801 gcggggcgtc cgggtctgag cctcagcaaa tgggctccga cgtgcgggac ctgaacgcgc
1861 tgctgcccgc cgtcccctcc ctgggtggcg gcggcggctg tgccctgcct gtgagcggcg
1921 cggcgcagtg ggcgccggtg ctggactttg cgcttcggct tacgggtcgt
1981 tgggcggccc cgcgccgcca ccggctccgc gccgcccgcg gccgccgccg cctcactcct
2041 tcatcaaaca ggagccgagc tggggcggcg cggagccgca cgaggagcag tgcctgagcg
2101 ccttcactgt ccacttttcc ggccagttca ctggcacagc cggagcctgt cgctacgggc
2161 ccttcggtcc tcctccgccc agccaggcgt catccggcca ggccaggatg tttcctaacg
2221 cgccctacct gccccagctgc ctcgagagcc agcccgctat tcgcaatcag ggtaagtagg
2281 ccgggggagcg cccccta
```

FIGURE 7B

Estrogen Receptor (ER): Homo sapiens estrogen receptor beta gene, promoter region
and partial cds
Accession Number AF191544

```
   1 actataggc aCGCGtggtC GaCGgccCGg gctggtattg atagatgcat tttcttcacc
  61 ctcacctatc tttttctgcc tgttggctta tggttgaaat tccttcatga tccttccat CGgtttccat
 121 ttccagagat atcttgttaa caagtatata ccaccaaatg aagctgattt tttttttttt
 181 ttttttttga gacagagtct CGctctgtCG cccaggctgg aatgcagtgg CGCGatcttg
 241 gctcactgca acctcCGcct cccatgttca agCGattctc ctgcctcagc ctcctgagta
 301 gctgggatta ctggcatgtg ccacCGCGtc cagccaattt ttgtattttt agtagagaCG
 361 aggtttcacc atgttggtca ggctggtctc aaactcctga cctCGtgatc cacctgcctc
 421 ggcctcccaa agtgctgaga ttataggtgt gagccaccat gcctgccat gaagctgatt
 481 tttttaaacc atcatttaac atttctccca ccaggacagg aggaggaaga gcatatgggg
 541 actgggtact ttgagagacc ccaggacagg agacagggag gctgagattg gcatgttgtc
 601 tgctgcagtt atttgccagC Gacacactct ttcCGtccaa actaacttct ctgcctcaag
 661 gacagggaga ctctgccttt caacctgaga gaaaccagga ctctcagctt taatgaaaat
 721 tggacttagg gtggggcagt ggagactttt cacagctatt gtttagctga tgaagcagat
 781 gcttctccat ctttggagcc tgtcttcatt acctgtggac ctcatctta tcaaccaga
 841 gcacacttgC Gtctctctat tttggctaaa caccaaacag ctgaggctgg tactgtaaaa
 901 ctttccctcc aaatgccccc cctCGtcttc gatctgatc acaaccctca
 961 aaaaccatgt cccttatgcc acctgagtag atggtttgat gattaattag gcacagatgt
1021 gacactgggg gggtctcaca atggcctgtg ggtcacatgc tactttcctt ttcattttca
1081 tcagcaacag ctgccttaaa gccagttaag actgtggtcc tagtctCGca ccctggggct
1141 cctgctgggg tgggtgaggg gaacacccca ttaagctggg ggaactgggg ctgccaccag
1201 ggggCGCGag gggccttCGc cCGagaagag gggtgggcag gtgcctccag CGgagaaggg
1261 CGcCGtggcC Ggaggcacag gtctcccCGg tgccacttca agtgagttCG aggaagtacc
1321 tgggatcttt gatctaaCGC Gaaaggcctt cccagtgacc tcttgagggc tgagaaccca
1381 ctccctccac ctctagtcca CGgctttgcc actccaggc cCGgaggttaC Gtttgctgct
1441 ggggatttga caaacccaaa gcctcctgg tttcaccact ggctccttag aatcagacat
1501 ctgttctgaa tgacacttat gtgagtcagg ggctgaggaC GtgatcctCG aagtgtggtc
1561 cccagactgg ctgtatcagt gtCGgcatcc cccaggacct ggttgaaat gcatattctc
1621 aggccctact ccagacctct taaatctgag actggggctg CGgggagCGc catctgtgCG
```

FIGURE 8A

```
1681  ccactatcct  tgtgggtgga  ccaggagtCG  gttCGaggt   gctcccactt  agaggtcaCG
1741  CGCGgCGtCG  ggCGttgctg  agacCGtCGg  gctccctggc  tCGgtcaCGt  gggctcaggc
1801  actactcccc  tctaccctcc  tctCGgtctt  taaaaggaag  aagggctta   tCGttaagtC
1861  Gcttgtgatc  ttttcagttt  ctccagctgc  tggctttttg  gacaccact   ccccCGccag
1921  gaggcagttg  caagCGCGga  ggctgCGaga  aataactgcc  tcttgaaact  tgcaggCGa
1981  gaggcaggCG  gCGagCGCg tg  ggcCGgggag  ggaccaccCG  agctgCGaCG  ggctctgggg
2041  ctgCGgggca  gggctggCGc  cCGgagcctg  agctgcagga  ggtgCGctCG  ctttcctcaa
2101  caggtggCGg  CGgggCGCGC  GCGggagac   cccccctaat  gCGgaaaac   caCGtgtcCG
2161  tattttagag  aaggcaagc   attataatga  CGtgtgttt   atctgcaagc  gcccaCGaat
2221  cttgagaac   attataatga  cctttgtgcc  tcttcttgca  aggtgttttc  tcagctgtta
2281  tctcaagac   tgatataaaa  aaactcacca  tctagcctta  attctccttc  ctcctacaac
2341  tgcagtcaat  ccatcttacc  cctggagcaC  Ggctccatat  ttctatagcc  ctcctatgta
2401  gacagccacc  atgaatatcc  agccatgaca  ttctggaggt  gctgctgtat  gaattacagc
2461  attcccagca  atgtcactaa  cttggaaggt  gggcc
```

Unmethylated 288 BP

G ggTGttttg agatTGtTGg   FUM 21 BP AT 60

TG agttgTGaTG ggtttttgg

ccaaaacc CATCAcaact CA   RUM 20 BP AT 58

Methylated 181 BP

agacaaggCG tgCGaCGt   FM 18 BP AT 60

CGggaaaag taCGtgttCG t   RM 20 BP AT 60

a CGaacaCGta ctttttcCG